Amendments to the Specification

The paragraph starting at page 8, line 3 has been amended as follows.

Reference numeral 111 denotes a read controller for controlling a motor and the like in ~~read~~ reading; and 112, a sheet scanner. In this embodiment, the sheet scanner 112 is a sheet through type scanner, and is made up of a CS/CCD image sensor, read motor, and the like. The sheet scanner 112 is of a sheet through type, but may be of a flat bed type. The actual read resolution of the sheet scanner 112 is 300 dpi. By thinning or interpolating scanning lines, data having different resolutions of 200 dpi and 360 dpi are generated. This processing is done by the image processor 105.

The paragraph starting at page 11, line 22 has been amended as follows.

~~Read~~ The read operation of the image forming apparatus having the above arrangement according to the first embodiment will be explained with reference to the flow chart in Fig. 5.

The paragraph starting at page 11, line 25 has been amended as follows.

Whether an original is set is checked by the original sensor (not shown) of the sheet scanner 112 (step S501). If YES in step S501, whether the read mode is designated by the color/gray scale/monochrome switching key 205 is checked (step S502).

At the start of this operation, the operator has designated one of color, gray scale, and monochrome read modes with the console. If the operator has not pressed the key, monochrome read is normally set. The operator presses the key 205 once to switch the read mode to gray scale read, twice to switch it to color read, and three times to switch it to monochrome read. Every time the key 205 is pressed, the read mode is cyclically switched. The apparatus designates the read mode by this operation. However, the present invention is not limited to this, and may adopt different keys for designating the respective read modes. The read mode is designated by the color/gray scale/monochrome switching key 205. However, the present invention is not limited to this. Alternatively, for example, the PC may designate one of color, gray scale, and monochrome read modes when the host computer 118 designates ~~read~~ reading of an image on the scanner via the bidirectional I/F 110.

The paragraph starting at page 18, line 4 has been amended as follows.

The signals L', a', and b' obtained by these equations undergo JPEG coding processing, and are stored in the image memory 104.

The paragraph starting at page 22, line 10 has been amended as follows.

If NO in step S802, the compression format is set to MR compression + non-compression (comp_mode=MR+RAW) (step ~~S805) is set;~~ S805), and no color space

representation is designated (step S806). Then, the flow shifts to processing shown in Fig. 12. As the compression format, two modes, JPEG and MR + non-compression modes, are prepared for the following reason. The JPEG mode cannot completely reconstruct read image information because of irreversible coding, but can achieve high compression efficiency. To the contrary, the MR + non-compression mode cannot achieve high compression efficiency, but can completely reconstruct read image information because of reversible coding. These compression modes can be selectively used in accordance with operator tastes.

The paragraph starting at page 26, line 1 has been amended as follows.

If NO in step S1007, i.e., the read mode is monochrome read (read_type=MONO), and the following processing is executed.

The paragraph starting at page 32, line 21 has been amended as follows.

The monochrome cartridge is an ink cartridge for a single black ink. The color cartridge is integrally constituted by general Y, M, C, and K ink tanks and a head, and is a general-purpose cartridge. The size-changeable color cartridge can switch ink droplets between two, large and small, sizes in order to further increase the gray level reproducibility. The photocartridge has two dark- and light-ink tanks for each of M and C color components to achieve high color reproducibility. The size-changeable

photocartridge can discharge large and small ink droplets in addition to the feature of the photocartridge. Note that the type of cartridge is not limited to this example, and another type of cartridge such as a special color cartridge may be used.

The paragraph starting at page 33, line 9 has been amended as follows.

The printing unit comprises a sensor for detecting the type of cartridge (not shown), and can detect the type of mounted cartridge by this sensor. Detectable states are six states, i.e., non-mounting of the cartridge (prt_head_sts=NONE), mounting of the monochrome cartridge (prt_head_sts=MONO), mounting of the color cartridge (prt_head_sts=COLOR), mounting of the size-changeable color cartridge (prt_head_sts=COLOR_E), mounting of the photocartridge (prt_had_sts=PHOTO), and mounting of the size-changeable photocartridge (prt_head_sts=PHOTO_E). The monochrome cartridge holds only black ink, and is dedicated to monochrome printing. The color cartridge holds four inks, cyan, magenta, yellow, and black inks, and can be used for both color and monochrome printing operations. The size-changeable color cartridge holds four inks, cyan, magenta, yellow, and black inks, and can change the ink droplet size between two, large and small, sizes in discharging ink, and can be used for both color and monochrome printing operations. The photocartridge holds six inks, cyan (dark), cyan (light), magenta (dark), magenta (light), yellow, and black inks, and is dedicated to color printing. The size-changeable photocartridge holds six inks, cyan (dark), cyan (light),

magenta (dark), magenta (light), yellow, and black inks, can change the ink droplet size between two, large and small, sizes in discharging ink, and is dedicated to color printing.

The paragraph starting at page 36, line 13 has been amended as follows.

Since the color and density reproducibilities change in accordance with the type of cartridge, this apparatus must have a conversion table corresponding to a density designated in ~~read~~ reading. However, the type of cartridge need not be considered in ~~read~~ reading for transferring a read image to the PC or ~~read~~ reading for transmitting a FAX image.

The paragraph starting at page 36, line 19 has been amended as follows.

Specifically, an optimal conversion table is selected in accordance with parameters such as the read mode, FAX transmission, PC scanning, copying, and a designated read density (in this image apparatus, the read density of the sheet scanner 112 can be designated from three densities, high, normal, and low densities, by the console 106 or the host computer). More specifically, a conversion table is selected as follows.

The paragraph starting at page 44, line 14 has been amended as follows.

In the above embodiments, the luminance/density conversion table includes the functions of executing correction corresponding to the characteristics of a printhead, so that conversion processing can be efficiently achieved. Alternatively, these functions may be realized by different conversion tables. The read mode includes three modes, color, gray scale, and monochrome modes, in the above embodiments, but may include only two modes, color and monochrome modes.